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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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DER-HWA GAN

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EXAMINER

HO, CHUONG T

ART UNIT

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2619

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/354,640	Applicant(s) GAN ET AL.	
	Examiner CHUONG T. HO	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-14, 16-18, 20 and 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13, 17, 18, 20 and 21 is/are allowed.
- 6) ☒ Claim(s) 8, 12, 14 and 16 is/are rejected.
- 7) ☒ Claim(s) 9-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/24/08 has been entered.
2. Claims 8-14, 16-18, 20-21 are pending.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. Claims 8, 14, 12, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haskin et al. (U.S. Patent No. 6,813,242 B1) in view of Hsing et al. (6,167,025), and in further view of Katzela et al. (Patent No.: US 5,872,773).

In the claim 8, Haskin et al. discloses a system for forwarding packets from a source device to a destination device in network interconnected elements include nodes (2,3,4,5,6) and links, comprising: determining an initial route, the initial route including at least one alternative route enable node (5) and at least one alternative route enable node; detecting a failed element; and automatically forward packets on the alternative route without communicating with either the source or the destination (see col. 3, lines 20-22, col. 4, lines 35-40, col. 2, lines 35-45).

However, Haskin et al. is silent to disclosing the at least one non alternative route enabled node storing an initial route from the source to the destination device; determining an alternative route by identifying the at least one alternative route enable node in the initial route, identifying downstream interconnected elements, and generating the alternative route based on the identified at least one alternative route enable node and the identified downstream interconnected elements; forwarding packets on the initial route.

Hsing et al. discloses the at least one non alternative route enabled node (figures 12, 3A, 3B, 3C, figure 16) storing an initial route from the source to the destination device; determining an alternative route by identifying the at least one alternative route enable node in the initial route, identifying downstream interconnected elements, and generating the alternative route based on the identified at least one alternative route enable node and the identified downstream interconnected elements; forwarding packets on the initial route (col.14, lines 33-43, The action taken by the switch 200 detecting a fault is a function of whether the switch is located upstream to a fault in

which case the switch is an upstream neighboring switch or downstream in which case the switch is a downstream neighboring switch. Upstream neighboring switches are generally responsible for initiating the process of establishing an alternative path to the destination device while downstream neighboring switches are generally responsible for initiating the release of network capacity reserved by switches which are no longer used as part of the path to communicate information between the source and destination devices.).

Both Haskin and Hsing discloses a system of fast alternative-path automatic rerouting of labeled data packets normally routed over a predetermined primary label switched path upon failure. Hsing recognizes the at least one non alternative route enabled node storing an initial route from the source to the destination device; determining an alternative route by identifying the at least one alternative route enable node in the initial route, identifying downstream interconnected elements, and generating the alternative route based on the identified at least one alternative route enable node and the identified downstream interconnected elements; forwarding packets on the initial route. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Haskin with the teaching of Hsing to provide the at least one non alternative route enabled node storing an initial route from the source to the destination device; determining an alternative route by identifying the at least one alternative route enable node in the initial route, identifying downstream interconnected elements, and generating the alternative route based on the identified at least one alternative route enable node and the identified downstream

interconnected elements; forwarding packets on the initial route in order to reduce the probability of packet loss in a network.

The combined system (Haskin - Hsing) discloses the limitations above, however, the combined system (Haskin - Hsing) are silent to disclosing determining the alternative route includes: checking bandwidth allocation.

Katzela et al. disclose determining the alternative route (redirection routes) includes: checking bandwidth (check resource) allocation (col.11, lines 5-7, If it has an entry, it initiates a Check-Resources-and-Cycles process to determine if the path r.sub.kl,n has sufficient resources on the links along the path to permit this redirection, and to ensure that no cycles are caused in the tree structure of the VPI V.sub.ln).

Both Haskin, Hsing, and Katzela discloses protection paths for the working path. Margin recognizes determining the alternative route includes: checking bandwidth allocation. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Haskin – Hsing) with the teaching of Katzela to determine the alternative route includes: checking bandwidth allocation in order to trigger by congestion, link / node failures (see Katzela, abstract).

5. In the claim 12, Haskin discloses detecting a failure is conducted locally by a node (switch 5) preceeding the failed element (switch 7) without requiring notification of a master server or an ingress node (see col. 3, lines 15-20).

6. Regarding to claim 16, the combined system (Haskin – Saleh) disclose the limitations above, however, the combined system (Haskin – Saleh) are silent to

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disclosing wherein checking bandwidth allocation comprises dynamically balancing capacity of nodes and links.

Katzela et al. discloses determining the alternative route (redirection routes) includes: checking bandwidth (check resource) allocation (col.11, lines 5-7, If it has an entry, it initiates a Check-Resources-and-Cycles process to determine if the path $r.sub.kl,n$ has sufficient resources on the links along the path to permit this redirection, and to ensure that no cycles are caused in the tree structure of the VPI $V.sub.ln$); wherein checking bandwidth allocation comprises dynamically balancing capacity of nodes and links (col. 14, lines 58-59, if node l has two or fewer functional VPIs to a node 1 after the link failure, then it redirects some of these VPIs in the set V in order to having multiple routes to destination node 1 for load-balancing and reliability reasons).

Both Haskin, Hsing, and Katzela discloses protection paths for the working path. Margin recognizes determining the alternative route includes: checking bandwidth allocation. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Haskin – Hsing) with the teaching of Katzela to determine the alternative route includes: checking bandwidth allocation in order to trigger by congestion, link / node failures (see Katzela, abstract).

7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haskin et al. (U.S. Patent No. 6,813,242 B1) in view of Saleh (U.S. Patent No. 7,002,917 B1), and in further view of Margill (Patent No.: US 6,606,297 B1).

In the claim 14, Haskin discloses a system for forwarding packets from a source device to a destination device in a network of interconnected element (switches 2,3,4,5) including nodes and links, comprising:

Establishing the path as the initial route, determining an alternative route; forwarding packets on the initial route; detecting a failed element; and automatically forwarding packets on the alternative route without communicating with either the source or the destination route (see col. 2, lines 35-45, col. 3, lines 15-22).

However, Haskin is silent to disclosing determining an initial route by determining a short path from the destination device to the source device within the network, refining the path according to administrative constraints, and establishing the path as the initial route, the initial route being prioritized to establish a hierarchy for preemption in routing network traffic.

Saleh discloses determining an initial route by determining a short path from the destination device to the source device within the network, refining the path according to administrative constraints (mini hop, mini costs) and establishing the path as the initial route, the initial route being prioritized to establish a hierarchy for preemption in routing network traffic (see col. 2, lines 65-67, a method for finding an alternate route with sufficient quality of service characteristics in the event of a network failure that is fast and efficient must be provided to enable such quick restoration) (see col. 27, lines 1-30,

table 9A, table 9B, Paths are computed using what is referred to herein as a QoS based shortest path first (QSPF) technique).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Haskin with the teaching of Saleh to provide determining an initial route by determining a short path from the destination device to the source device within the network, refining the path according to administrative constraints, and establishing the path as the initial route, the initial route being prioritized to establish a hierarchy for preemption in routing network traffic in order to select routing paths through networks.

The combined system (Haskin - Saleh) discloses the limitations above, however, the combined system (Haskin - Saleh) are silent to disclosing determining the alternative route includes: checking bandwidth allocation.

Katzela et al. disclose determining the alternative route (redirection routes) includes: checking bandwidth (check resource) allocation (col.11, lines 5-7, If it has an entry, it initiates a Check-Resources-and-Cycles process to determine if the path $r.sub.kl,n$ has sufficient resources on the links along the path to permit this redirection. and to ensure that no cycles are caused in the tree structure of the VPI $V.sub.ln$).

Both Haskin, Hsing, and Katzela discloses protection paths for the working path. Margin recognizes determining the alternative route includes: checking bandwidth allocation. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Haskin – Hsing) with the teaching of

Katzela to determine the alternative route includes: checking bandwidth allocation in order to trigger by congestion, link / node failures (see Katzela, abstract).

Allowable Subject Matter

8. Claims 9-10, 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Claims 13, 17, 18, 20-21 are allowed.

10. The following is a statement of reasons for the indication of allowable subject matter: the claim 9 is object because the cited prior art fails to disclose refining the path according to administrative constraints.

11. The following is a statement of reasons for the indication of allowable subject matter: the claims 11, 13 are object because the cited prior art fails to disclose refining the route to exclude the failed element on the initial route.

12. The following is a statement of reasons for the indication of allowable subject matter: the claims 17, 18 are object because the cited prior art fails to disclose generating the alternative route excluding the failed element and the plurality of nodes.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUONG T. HO whose telephone number is (571)272-3133. The examiner can normally be reached on 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, EDAN ORGAD can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

03/20/08

/CHUONG T HO/

Partial signatory authority , Art Unit 2619